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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/256,346 02/24/99 TAKATORI

K 0053397

EXAMINER

WM02/0314
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2100 PENNSYLVANIA AVENUE N W
WASHINGTON DC 20037-7060

NELSON, A	
ART UNIT	PAPER NUMBER

2675
DATE MAILED:

03/14/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.
09/256,346

Applicant(s)
Takatori et al.

Examiner
Alecia Nelson

Group Art Unit
2675



☒ Responsive to communication(s) filed on Feb 24, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-15 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 7,8

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d), which papers have been made of record in the file.

Information Disclosure Statement

2. The references listed in the Information Disclosure Statement submitted on 2/17/99 have been made of record and has been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

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made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. *Claims 1, 8, 10, and 11* are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No. 4,800,382) in view of Bonnett et al. (U.S. Patent No. 6075506).

Okada et al. teaches a driving method for a liquid crystal device of the type comprising a matrix electrode structure having scanning lines and data lines. In the driving method, in a first period, a scanning selection signal is applied to a scanning line and applying an information signal is applied to a data line in synchronism with the scanning selection signal, and in a second period an alternating auxiliary signal is applied to the data line (see abstract). It is also taught, with reference to figure 6, that all or a part of the picture elements on the whole picture written in the previous field or frame is erased at the same time and then successively written (see column 5, lines 59-63).

Okada et al. fails to specifically teach that the scan lines are successively scanned in a second field in an order reverse to that in the first field.

Bonnet et al. teaches a LCD comprising a matrix of pixels (7) formed at the intersections of n data or column electrodes (1) and me strobe or row electrodes (2) (see column 3, lines 37-49). The display data are arranged in frames such that each frame contains data for refreshing all the pixels (7) of the display. Fresh frames of data are supplied consecutively for display. Within each frame, the pixels are refreshed with new display data one row at a time starting with the pixels associated with the top strobe electrode and finishing with the pixels associated with the

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bottom strobe electrode. Data signals (D) are supplied simultaneously by the data signal generator (4) to the data electrodes (1) in synchronism with the strobe pulse (9). Refreshing the display with the next frame of display data begins at T2. However, in the second frame, the strobe signals are inverted so that each comprises a positive blanking pulse (10) followed by a negative strobe pulse (11) (see column 3, line 57-column 4, lines 26).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to include the that which is taught by Bonnett et al. and Okada et al. to thereby provide a driving method for a liquid crystal device having improved display and driving characteristics .

5. **Claims 2-5 and 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and Bonnett et al. as applied to **claim 1** above, and further in view of Kurematsu (U.S. Patent No. 5,796,380).

With reference to **claims 2 and 8**, Okada et al. and Bonnett et al. fails to teach that the first and second fields constitute one frame in interlace drive.

Kurematsu teaches a FLC panel drive system in which pixels constituting odd field and the even fields are independently driven in an interlace mode in which a nondisplay field period is used as a resetting period (see column 2, lines 38-44).

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With reference to **claims 3-5, and 8**, Okada et al. and Bonnett et al. teaches that there is provided two write periods as well as two reset periods for each scan line (see column 3, lines 57- column 4, line 17).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the interlace driving mode as taught by Kurematsu to the drive method as taught by Bonnett et al. to thereby provide a method to eliminate interference of impurity with a write operation when the FLC panel is driven in an interlace mode.

6. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and Bonnett et al. as applied to **claim 5** above, and further in view of Kurematsu and Kamiya et al (U.S. Patent No. 4,694,348).

Okada et al., Bonnett et al. and Kurematsu teach all that is required as explained above, however fail to teach that data corresponding to the three colors are successively displayed.

Kamiya et al. teaches a method of driving a liquid crystal display panel whereby each set of six scanning lines consisting of three successive lines of one field and three corresponding lines of the succeeding field. Three lines are displayed by display elements driven by one scanning electrode and the remaining three lines by display elements are driven by an immediately adjacent scanning electrode (see column 10, lines 3-19). It is further taught that this driving method is applicable to black-and-white television displays and to color displays (see column 10, lines 20-24).

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Therefore it would have been obvious to one having ordinary skill in the art to combine the method of driving three successive lines of color, as taught by Kamiya et al. to the driving method as taught by Bonnett et al. and Kurematsu to thereby provide a drive method that is applicable to drive a color display.

7. *Claims 6, 7, 9, and 12-15* are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. and Bonnett et al. as applied to **claims 1, 10, or 11** above, and further in view of Kamiya et al.

Bonnett et al. teaches all that is required as explained above, however fail to teach that data corresponding to the three colors are successively displayed.

Kamiya et al. teaches a method of driving a liquid crystal display panel whereby each set of six scanning lines consisting of three successive lines of one field and three corresponding lines of the succeeding field. Three lines are displayed by display elements driven by one scanning electrode and the remaining three lines by display elements are driven by an immediately adjacent scanning electrode (see column 10, lines 3-19). It is further taught that this driving method is applicable to black-and-white television displays and to color displays (see column 10, lines 20-24).

Therefore it would have been obvious to one having ordinary skill at the time of the invention to divide the scan lines into a plurality of blocks, as taught by Kamiya et al., and simultaneously drive the plurality of blocks with the drive and reset method taught by Bennett et

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al. to thereby provide that the resolution of a display be less visible of flicker to the eye of an observer.

Conclusion

8. Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 2023; or faxed to: (703) 308-9051, (for formal communications intended for entry) or: (703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT"). Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143 between the hours of 8:00 a.m and 5:00 p.m. on Monday-Friday.

If attempts to reach the above examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703)305-9720.



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

adn/ADN
March 12, 2001